Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 12, with the following rewritten paragraph:

For example, Japanese ~~Paten~~ Patent Application Laid-open No. 2002-216817 disclosed such cooling device which decreases the liquid coolant bypass ratio to an electric conductivity reduction device (ion-exchange resin) when the temperature of the liquid coolant is high and electric conductivity is low, and increases the bypass ratio to the electric conductivity reduction device when the temperature of the liquid coolant is low and electric conductivity is high. With such technology, at a high temperature when high cooling performance is required, the bypass flow rate can be increased and priority can be placed on cooling, and at a low temperature when the amount of emitted heat is small, priority can be placed on reducing electric conductivity of liquid coolant.

Please replace the paragraph beginning on page 5, line 2, with the following rewritten paragraph:

Because conventionally the coolant temperature is not controlled, if the electric conductivity temporarily increases following the increase in coolant temperature, then the decrease in electric conductivity with the electric conductivity decreasing means or the cooling by the coolant fails and a high electric conductivity is assumed. On the other hand, the temperature assumed by the coolant after the warm-up can be estimated to a certain degree for each system. With the above-described configuration, if the electric conductivity and coolant temperature at a certain point in time are measured and the results are fit into the correlation, then the electric conductivity of the coolant at any temperature can be estimated. Therefore, when the electric conductivity at a certain target set temperature exceeds the target electric conductivity range, then changing the target set temperature so that the electric

conductivity enters the range prevents the electric conductivity from being abnormally high. Thus, because the coolant temperature after the ~~warm-pu~~ warm-up is controlled as an target set temperature, and the electric conductivity at the target set temperature is evaluated in advance by using the correlation between the electric conductivity of the coolant and a parameter influencing the coolant temperature, and the parameter related to the temperature is adjusted so that the estimated electric conductivity becomes within the target electric conductivity range, the electric conductivity at the target set temperature can be controlled so as to be held within the appropriate range (feed-forward control).

Please replace the paragraph beginning on page 8, line 2, with the following rewritten paragraph:

Embodiment 1 of the present invention relates to cooling control in the case where direct decrease in the electric conductivity by electric conductivity decreasing device is not taken into account. Fig. 1 shows the entire configuration of the present fuel cell system. As shown in Fig. 1, in the fuel cell system, a circulation channel 11 of a liquid coolant is provided so that the liquid coolant can be circulated inside a fuel cell stack 10. The circulation channel 11 is divided into a bypass channel 12 and a cooling channel 13 where a radiator 14 is provided. The circulation channel is configured so that the bypass channel 12 and cooling channel 13 can be selected by a three-way valve 17. A liquid coolant ~~pump 13~~ pump 18 that is driven at a revolution speed based on a control signal from a control unit 20 is provided in the circulation channel 11, thereby enabling forced circulation of the liquid coolant. A thermometer St for detecting the temperature of the liquid coolant and an electric conductivity meter Sc for detecting the electric conductivity of the liquid coolant are provided in the outlet opening of the fuel cell stack 10.

Please replace the paragraph beginning on page 22, line 18, with the following rewritten paragraph:

With the present invention, the electric conductivity can be reliably maintained within a target range based on the correlation between the parameters relating to the coolant temperature and the electric conductivity of the coolant. Therefore, the invention can be generally employed in power cell systems where the increase in electric conductivity can cause problems. Such fuel cell system can be installed on land vehicles such as automobiles, sea vehicles such as ships, underwater vehicles such as submarines, and air vehicles such as aircrafts, or on stationary installations ~~such power~~ such as power generation plants.